1850MNRAS..10..144D

an interruption of the means necessary to carry on the computations and make the results public. Under these circumstances, and feeling that a correct theory of the moon, which should represent the immense series of Greenwich lunar observations, was not only most desirable in itself, but intimately connected with the Royal Observatory* and our national interests, Mr. Airy applied to the Lords Commissioners of the Admiralty for the small sum required to enable Professor Hansen to complete his work: it is almost needless to add that this was immediately granted in the handsomest manner.

The President stated that he had received from Dr. Henderson (now of Greenbank, St. Helen's, Lancashire) a new set of numbers for the teeth of wheels in a train to convert revolutions in solar time into revolutions in sidereal time, to which probably nothing comparable in accuracy had ever been produced. Dr. Henderson's numbers given in a former communication were founded upon a value of the sidereal day, differing from that in the *Nautical Almanac* by a perfectly insignificant quantity. This apparent difference, however, had stimulated Dr. Henderson to attempt a new combination of wheels, and he had discovered the following:—

If a spindle revolving in 24 solar hours carry a wheel of 50 teeth, which works in a wheel of 30 teeth on the second spindle; and if the second spindle carry a wheel of 182 teeth, which works in a wheel of 211 teeth on the third spindle; and if the third spindle carry a wheel of 196 teeth, which works in a wheel of 281 teeth on the fourth spindle,—then the time of revolution of that fourth spindle, in mean solar seconds, will be

$$86164^{s}\cdot090603274.$$

The length of the sidereal day adopted in the *Nautical Almanac* is

$$86164^{s}\cdot0906.$$

It is evident that these numbers are practically identical, inasmuch as the figures are the same as far as it has been thought necessary to retain decimals in the *Nautical Almanac*. Dr. Henderson estimates the difference at 1 second in 855 years, but even this estimation is too great.

THE NEW PLANET PARTHENOPE.

Dr. Annibal de Gasparis, assistant at the Royal Observatory, Naples, in a letter to Sir John Herschel, announces his discovery

---

* The Royal Observatory of Greenwich was established for the express purpose of observing the moon, and rendering her motions useful to navigation; this object has been kept steadily in view for more than 150 years, and with complete ultimate success.

1850MNRAS..10..144D

of a new planet on the 11th of May. He states that he had used his utmost endeavours to realise a "Parthenope" in the heavens, such being the name which had been suggested by Sir John Herschel on the occasion of the discovery of *Hygeia* in 1849. The planet shone as a star of the ninth magnitude.

Observations.

NAPLES. (Dr. A. de Gasparis.)

	Naples M.T.	R.A.	N.P.D.
	h m s	° ′ ″	° ′ ″
May 11	12 51 53·1	230 21 53·2	100 35 12·9
12	11 42 2·8	230 8 28·6	31 58·9
13	12 6 35·6	229 53 41·2	28 35·5
14	10 28 16·8	40 36·0	25 31·1
15	9 52 50·5	229 26 25·0	22 39·1
17	10 59 36·0	228 57 7	16 42
18	11 14 36·2	42 41·8	13 52·5
19	10 18 43·3	29 20·2	11 13·8
20	10 0 37·3	228 15 30·5	100 8 33·1

CAMBRIDGE. Northumberland Equatoreal. (Prof. Challis.)

	Greenwich M.T.	R.A.	N.P.D.	No. of Comps. R.A.	No. of Comps. N.P.D.	Star.
1850.	h m s	h m s	° ′ ″			
May 30	9 55 48·3	15 4 17·81	99 49 11·0	1	1	*a*
	11 20 54·7	14·53	7·5	2	1	*b*
June 1	11 14 58·1	15 2 41·69	99 46 46·2	10	10	*b*

On the Meridian.

June 1	10 22 10·7	15 2 43·50	99 46 50·3
2	17 30·5	1 59·10	45 53·8
3	12 50·9	1 15·26	45 9·4
4	10 8 12·5	15 0 32·64	44 30·8
7	9 54 27·7	14 58 35·24	43 28·7
8	9 49 55·5	14 57 58·89	99 43 22·0

Assumed Mean Places of the Stars, 1850·0.

	R.A.	N.P.D.	
	h m s	° ′ ″	
a	15 9 24·98	99 56 42·2	Bessel xv. 160
b	15 7 58·09	100 2 17·6	— 132

The place of *b* was determined by two transit and two circle observations: that of *a* is taken from Weisse's catalogue.

1850MNRAS..10..144D

LIVERPOOL. Equatoreal. (Mr. Hartnup.)

1850.	Greenwich M.T.	R.A.	$\log \frac{p}{P}$	N.P.D.	$\log \frac{q}{P}$	Star of Comp.
	h m s	h m s		° ′ ″		
June 2	10 23 49·9	15 1 58·76	−7·0243	99 45 59·26	−9·9488	β Libræ
	11 3 42·9	57·44	+7·7761	53·51	9·9483	—
3	11 44 56·6	15 1 12·66	8·1405	99 45 7·77	9·9458	—
	12 4 53·4	12·06	8·2324	5·53	9·9441	—
	12 24 50·4	11·56	+8·3054	5·14	−9·9421	—

The observations are corrected for refraction. The corrections to be applied for parallax in time and arc are represented by p and q. P is the equatoreal horizontal parallax.

The following is the assumed place of β *Libræ* derived from the Greenwich Twelve-year Catalogue:—

For January 1, 1850·0.

Mean R.A.	Mean N.P.D.
h m s	° ′ ″
15 8 56·50	98 49 33·08

LIVERPOOL. 20-foot Equatoreal. (Mr. Lassell.)

1850.	Greenwich M.T.	R.A. ✱ — Planet.	N.P.D. Planet — ✱
	h m s	s	″
May 31	12 46 57·58	22·73	....
	12 59 57·03	....	56·35

The star and planet of equal brightness, a good tenth magnitude.

The star may be thus identified:—

It precedes a by 1^m 22^s·0 and is South of a 1′ 14″·1

It follows b in 0 11·2 North b 9 19·5

Approximate places of a and b, from Harding's Catalogue for 1800, accompanying the xv. hour of the Berlin Maps:—

		Mag.	R.A.	N.P.D.
			h m s	° ′
1800	*a*	9	15 2 26	99 33·9
	b	9	15 0 53	99 45·5

DURHAM. Equatoreal. (Prof. Chevallier and Mr. R. C. Carrington.)

1850.	Greenwich M.T.	R.A.		N.P.D.	
	h m s	h m s		° ′ ″	
June 1	12 50 39·2	15 2 38·44	+0·023 p	99 46 48·4	−0·882 p

Compared with Weisse xv. 45, eleven times in R.A. and four times in N.P.D.

REGENT'S PARK. (MM. Bishop and Hind.)

1850.	Greenwich M.T.	R.A.	N.P.D.
	h m s	h m s	° ′ ″
May 30	11 31 41	15 4 14·31	99 49 5·8
31	10 36 23	15 3 29·16	99 47 55·4

The planet appeared as bright as stars of the 9·10th magnitude. The above places depend on the position of No. 45, Hour xv. of Weisse's catalogue.

1850MNRAS..10..144D

HAMBURG. (M. C. Rümker.)

	Hamburg M.T.	R.A.	N.P.D.	
	h m s	° ′ ″	° ′ ″	
May 27	11 40 8·7	226 40 37·5	99 53 35·2	Equatoreal.
28	10 41 34·4	28 30·1	52 4·2	Mer. Circle.
29	36 49·6	16 15·0	50 30·6	——
30	32 6·1	226 4 18·4	49 15·0	——
31	27 23·1	225 52 32·5	47 59·0	——
June 1	22 41·6	41 6·5	46 52·8	——
2	18 0·1	29 55·8	45 58·2	——
3	10 13 22·2	225 19 7·9	99 45 12·0	——

ALTONA. (Prof. Schumacher.)

	M.T.	R.A.	N.P.D.	
	h m s	° ′ ″	° ′ ″	
May 28	11 25 8	226 28 17·4	99 52 1·9	Equatoreal.
June 1	10 22 41	225 41 6·1	46 55·0	Mer. Circle.
2	18 1	29 58·6	......	——
3	10 13 22	225 19 6·0	99 45 8·7	——

BERLIN. (Prof. Encke.)

	Berlin M.T.	R.A.	N.P.D.	
	h m s	° ′ ″	° ′ ″	
May 25	11 12 8·0	227 6 42·2	99 57 16·5	Equatoreal.
27	10 20 26·2	226 41 28·0	99 53 40·4	——

Elements.

From the observations of May 12 and 28 Mr. Weyer has calculated the following *circular* elements, which are stated by Prof. Schumacher to represent the observations during May with great accuracy:—

Longitude, May 12·4773, Mean Berlin Time = 231° 1′ 31″·8, M. Eq. 1850

	° ′ ″
Ascending Node	128 57 42·7
Inclination	4 29 52·1
Log. radius of Orbit	0·376901
Log. diurnal Motion in seconds...	2·9846555

Sidereal Period 1343 days.

Elliptic. By M. George Rümker.

Perihelion Passage, 1851, Feb. 15·663509 Mean Greenwich Time.

	° ′ ″	
Longitude Perihelion	315 33 25·2	Mean Equinox, 1850, Jan. 1.
— Ascending Node	125 39 4·2	
Inclination	4 33 8·2	
φ	5 54 41	
e	0·1030387	
Log. semi-axis Major	0·38472636	
Sidereal Revolution	1379·39 days.	